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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,076	06/26/2001	Mitsugu Hanabusa	1232-4729	2219
27123	7590	04/21/2004	EXAMINER	
MORGAN & FINNEGAN, L.L.P. 345 PARK AVENUE NEW YORK, NY 10154			ROSARIO-VASQUEZ, DENNIS	
			ART UNIT	PAPER NUMBER
			2621	

DATE MAILED: 04/21/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/892,076

Applicant(s)

HANABUSA, MITSUGU

Examiner

Dennis Rosario-Vasquez

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06/26/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5.6
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Page 14, line 20: "byeither" should be changed to "by either".

Appropriate correction is required.

Information Disclosure Statement

2. The information disclosure statement filed March 26, 2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The IDS lists the document: "A copy of the Japanese Office Action issued in the priority application JPA 2001-188236", but the document was not found.

Appropriate correction is required.

Claim Objections

1. The following quotations of 37 CFR § 1.75(a) is the basis of objection:
 - (a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.
2. Claim 14 is objected to under 37 CFR § 1.75(a) as failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention or discovery.

Claim 14, line 2 has the phrase "at least pulses" which does not make the respective claim clearly understood. Therefore "at least pulses" will be interpreted as "at least three pulses".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 7-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Boyd et al. (US Patent 6,166,831 A).

Regarding claim 1, Boyd et al. discloses an image processing apparatus (fig. 1) comprising:

image sensing means (Fig. 1, num. 12 is an image sensor at col. 2, line 44) which includes a first element array (fig. 4, num. 30b) having a plurality of photoelectric conversion elements (fig. 4, num. 34b) arranged in a line (Figure 4, num. 30b is a detailed version of the image sensing means of figure 1, num. 12), and a second element array (fig. 4, num. 32b) shifted from the first element array by a predetermined distance (Figure 2, num. 37 is a distance similar to the shifted distance of figure 4.) in a main scanning direction (fig. 1, num. 16) and having a plurality of photoelectric conversion elements (Fig. 4, num. 36b) arranged in a line, and outputs signals (fig. 4, numerals 42b and 44b are two output signals connected to numeral 22b) of the first and

second element arrays (fig. 4, numerals 30b and 32b) from a single output portion (fig. 4, num. 22b); and

driving means (fig. 1, num. 20 or figure 4, num. 20b) having a first mode of reading signals (Using figure 4 all the pixels in row 32b can be read after the previous row 30b was read at col. 3, lines 57,58.) from the second element array (fig. 4, num. 32b) and continuously outputting the signals from the output portion (A clock is used to output signals from the output portion of figure 4, num. 22b.), and a second mode of reading signals (Using figure 4 all the pixels in row 30b can be read out at col. 3, lines 57,58.) from the first element array (fig. 4, num. 30b) and continuously outputting the signals from the output portion.

Regarding claim 2, Boyd et al. discloses the apparatus according to claim 1, wherein said driving means alternately repeats the first and second modes (Boyd states that the modes of reading an array can read a single pixel in one row of one array then a single pixel can be read out in another array at col. 3, line 58).

Regarding claim 3, Boyd et al. discloses the apparatus according to claim 1, wherein said driving means includes operation of alternately repeating the first and second modes (This element was addressed in claim 2) and operation of continuously performing the first or second mode (Boyd et al. states, "...the system can be made to read out only one row...(col. 3, line 42).")

Regarding claim 4, Boyd et al. discloses the apparatus according to claim 1, further comprising:

a light source for irradiating an original with light or making light pass through the original (Boyd et al. states, "The image is projected from the page or paper 14 to the linear array 18...(col. 2, lines 51,52)."; and

imaging means for forming light reflected by the original into an image on said image sensing means (This element of claim 4 was addressed previously) while scanning light reflected by the original (Boyd et al. states, "...to provide an output [image]...a line at a time as paper 14 and linear array 18 are moved relative to each other (col. 2, lines 53-55).").

Claim 7 is similar to and addressed in claim 1 above except for requiring an additional element of a driving means for outputting signals from one of the first and second element arrays and resetting signals from the other element array in the output portion. However, the additional element was addressed in claim 3. Note that "resetting signals" perform the same function as the technique of Boyd et al. which uses an "...individual selection of [pixel signals from the first and second element arrays to read out one array]...(col. 3, line 40-46).").

Claim 8 is similar to and addressed in claim 3. Note that the language may be different, but both claims are performing the same function of outputting a signal from one array.

Claim 9 is similar to and addressed in claim 4.

Claim 10 is similar to and addressed in claim 5.

Claim 11 is similar to and addressed in claim 6.

Claim 12 is similar to and addressed in claim 1 except for the additional elements which are disclosed by Boyd et al. of:

a first shift register (fig. 4, num. 42b) for transferring signals from said first element array;

a second shift register (fig. 4, num. 44b) for transferring signals from said second element array; and

an input unit (figure 6, numerals 21d-f and 18d-f comprise the input unit and is a triplicate array modification of figure 4) for receiving at least three pulses (Six pulses are used for figure 6 which comprise three arrays (fig. 6, num. 18d, 18e, 18f) where each array receives two pulses each as shown in figure 4, label "Control Pulse" for the respective shift registers 42b and 44b) having different phases (Boyd et al. uses the control pulse to select a pixel in any order or multiple pixels from each array of figure 4, numerals 34b and 36b or figure 6, num. 18d, 18e, and 18f) at col. 3, lines 56, 57.) and supplying the pulses to said first and second shift registers.

Regarding claim 13, Boyd et al. discloses the apparatus according to claim 12, wherein said transfer means (Figure 4, numeral 42b and 44b) transfers the signals by using at least three pulses having different phases (The transfer means of fig. 4, num. 42b and 44b uses the "Control Pulse" to select three pixels from either array 30b or 32b: one pixel in one row 30b as the first selection or pulse, then selects a next pixel in another row 32b as the second pulse and a last pixel in row 32b as the third pulse. Each selection is read out individually using a clock at col. 3, lines 52-56, 59. Note that "the

sample” which corresponds to a “particular pixel 34b, 36b” is read out depending on the clock at col. 3, lines 52-56.)

Regarding claim 14, Boyd et al. discloses the apparatus according to claim 12, further comprising driving means (fig. 6, num. 20d) for inputting at least pulses having different phases to said input unit and performing control to add (fig. 6, num. 22d) signals from adjacent elements together in said shift register (Fig. 5, numerals 60, 62 shows adjacent elements that are added, numeral 64. Figure 5 shows how to add signals as is similarly performed in figure 6.)

Claim 15 is similar to and addressed in claim 7. Note that claim 15 is using different language than claim 7, but both claims are performing the same function.

Regarding claim 16, Boyd et al. discloses the apparatus according to claim 12, wherein at least three pulses having different phases are input to said input unit (This element of claim 16 was addressed in claim 12) to perform control to add signals (Fig. 6, num. 22d adds signals to form a color image) from adjacent elements in said shift register (This element of claim 16 was addressed in claim 14), and two pulses having different phases are input to said input unit to output signals from said first and second pixel arrays without addition (This element of claim 16 was addressed in claim 15).

Claim 17 is similar to and addressed in claim 4.

Claim 18 is similar to and addressed in claim 5.

Claim 19 is similar to and addressed in claim 6.

Claim 20 is similar to and addressed in claim 1.

Claim 21 is similar to and addressed in claims 1 and 7.

Claim 22 is similar to and addressed in claim 12.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd et al. (US Patent 6,166,831 A) and in view of Suzuki (US Patent 6,163,342 A).

Regarding claim 5, Boyd et al. does not teach an analog gain control for the output, but Boyd et al. states, "...[the contents of an pixel array] may be combined in any desired combination under control of a microprocessor or other control device (col. 4, lines 10-12) ."

However, Suzuki, in the field of endeavor of image sensing, does teach claim 5 of an apparatus comprising:

analog gain control means (Suzuki, fig. 9, num. 12) for controlling an analog gain (Suzuki, fig. 9, num. 30: "AGC" or automatic gain control) of a signal output from an image sensing means (fig. 9, num. 14); and

an analog/digital converter (Suzuki, fig. 9, num. 8) for digitizing the signal controlled by said analog gain control means.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the control means as taught by Boyd et al. with the analog gain

control means of Suzuki, because the use of Suzuki's gain control implements "a case where brightness of a document becomes lower than a predetermined value, by gradually increasing gain, it is possible to sense the document in the best S/N condition (col. 11, lines 39-42)."

Regarding claim 6, Suzuki teaches the apparatus according to claim 5, further comprising shading correction means (fig. 9, num. 31:"CLAMPING CIRCUIT") for performing shading correction for the digitized signal (Suzuki states,"...clamping circuit operates...and exposure correction is performed...(col. 14, lines 30,31).").

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Howell (US Patent 6,570,613 B1) is pertinent as teaching a method of shifting an array by increments for each exposure to increase the resolution of an image (fig. 10).

Bloss et al. (US Patent 6,437,307 B1) is pertinent as teaching a method of using a staggered array that comprises light and non-light sensitive zones that produce a grey scale values and interpolated pixel values, respectively at col. 7, lines 11-27.

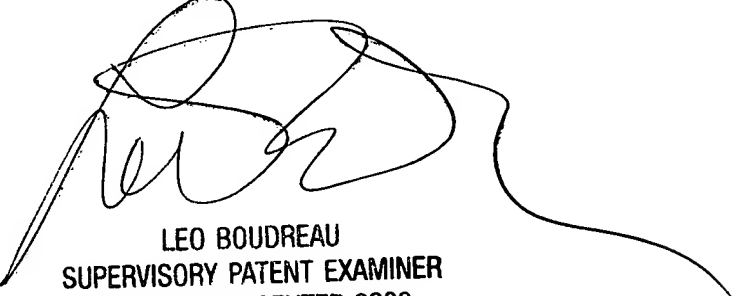
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario-Vasquez whose telephone number is 703-305-5431. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau can be reached on 703-305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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